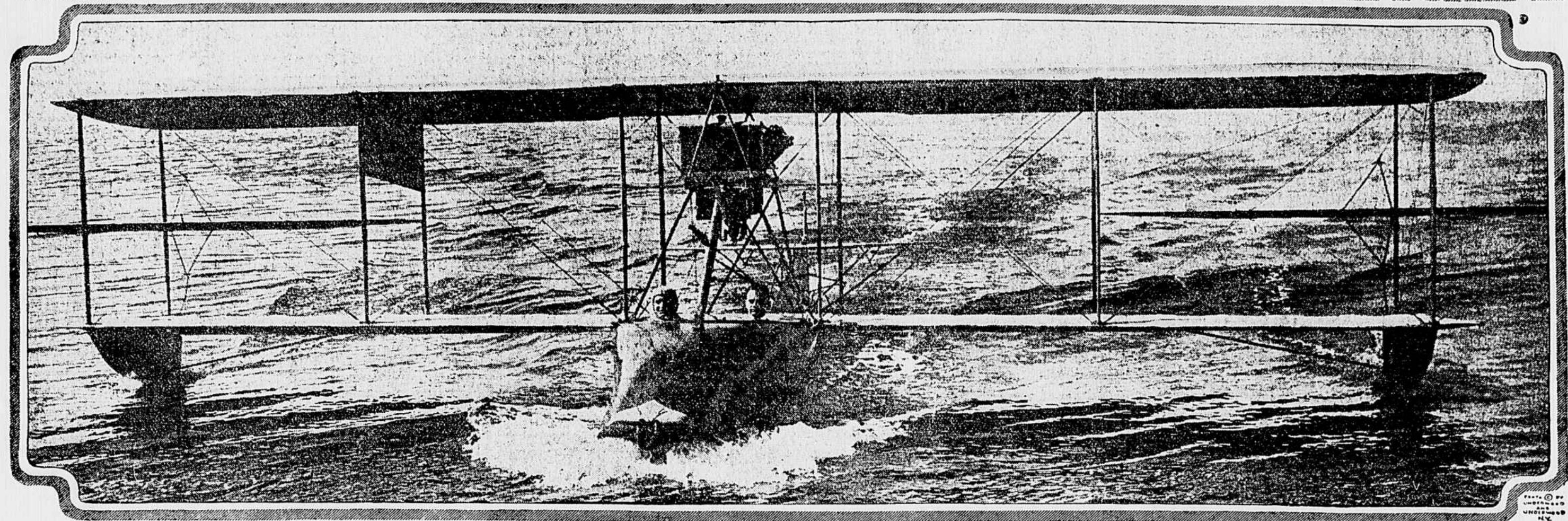
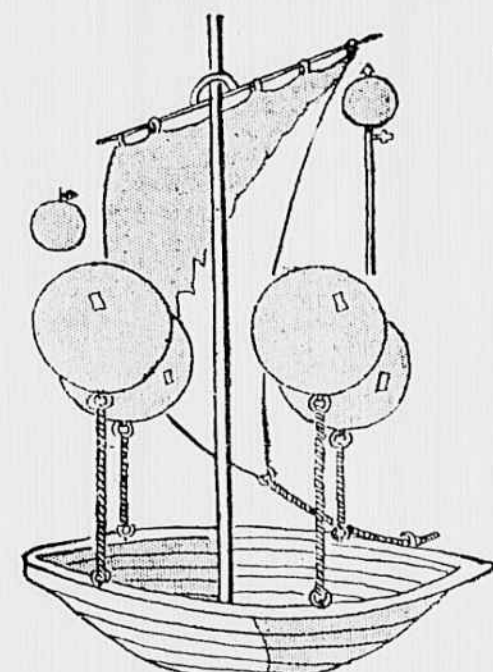


THE 300TH ANNIVERSARY OF THE FLYING MACHINE

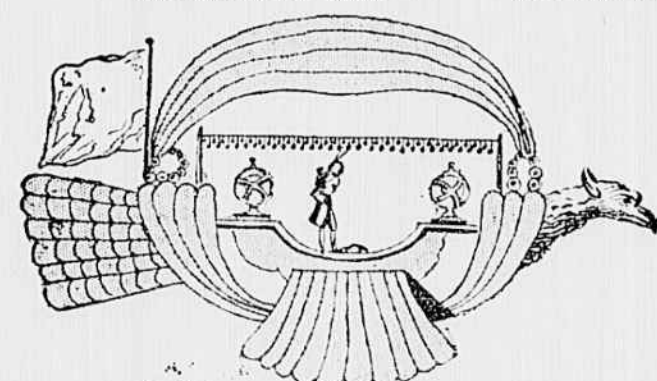


The Last Word in Aeroplanes—the New Curtiss Flying Boat, Which Is Equally at Home on the Water and in the Air.

Remarkable and Fantastic Inventions Through Which for Three Centuries the Powerful Air Conquering Aeroplane of To-day Was Slowly Developed



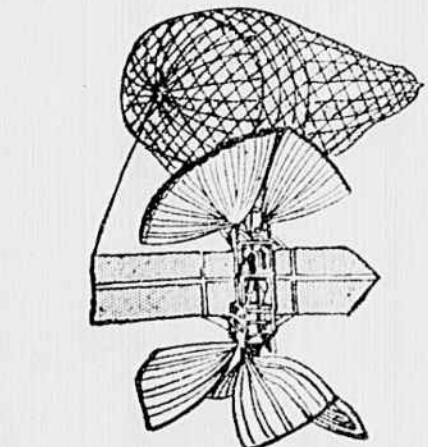
An Odd, Dishlike Flying Machine Supported by Balloons and Driven by Fans. An Invention of 1680.



Aerial Boat Invented by L. de Gusman, the Chaplain of the King of Portugal, in 1709.



Reminiscent of "Darius Green," the Flying Man of Restif de la Bretonne, in 1781.



A Flying Machine of 1782, Invented by M. Garenne.

IT is odd that among the many anniversaries being celebrated this year the fact that 1916 is the three hundredth anniversary of the flying machine seems either to be unknown or forgotten. Yet it is well authenticated that the year that Shakespeare passed away saw the advent of man as the conqueror of the air. In 1616 a flying machine designed by a certain Pierre de L'Arannes actually made a flight of one mile.

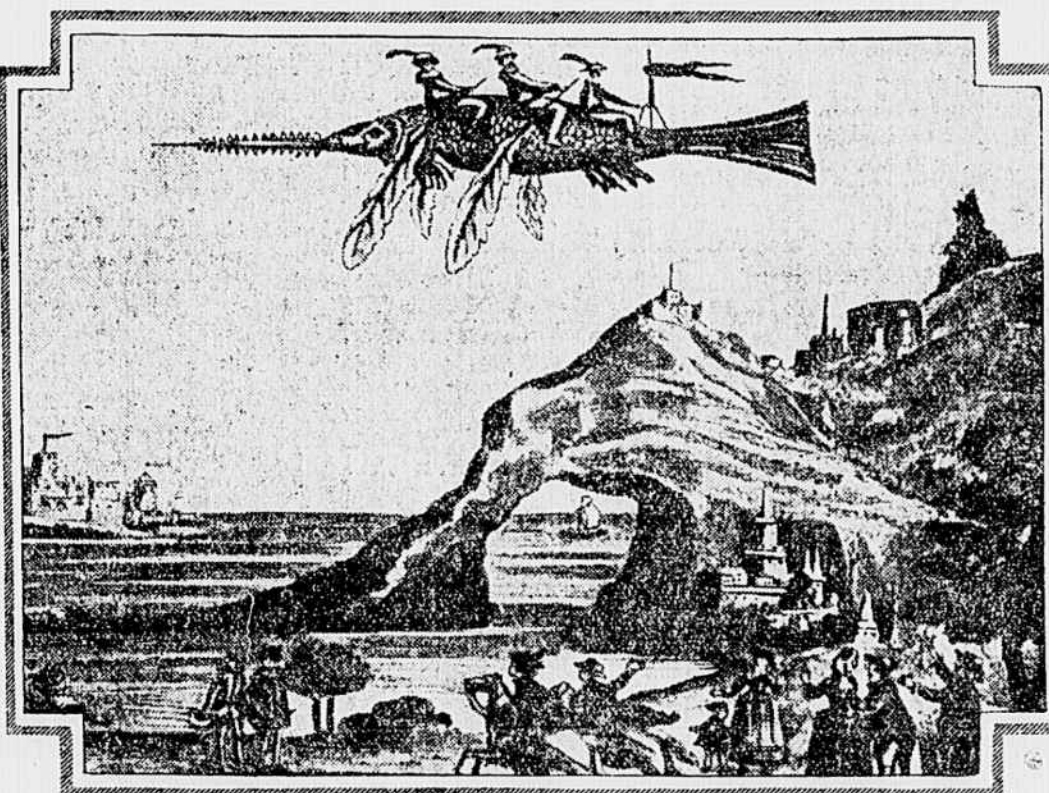
This machine was called the "Flying Fish," and while one rare picture of it exists and is printed on this page, there is, curiously enough, little record left of its construction or its principles. The picture referred to is a "prophetic one" so far as its composition is concerned. It was painted in 1609 at the time that de L'Arannes was still at work on his invention. It was not until seven years afterward that the machine was brought out and, manned by four aviators who sat on the back of the "fish," made its one and only trip.

The "fish" seems to have been a balloon fancifully shaped as the picture shows it. Whether it was filled with heated air, like the Montgolfiers of a century and a half later, or whether it was filled with gas is not known. Whatever the lifting power, the fact that it was steered and propelled by planes shaped like fins entitles it to be classed as an aeroplane, and the first one of which there is any record that actually flew.

At the end of its flight it seems to have turned turtle, spilling its passengers and putting an end to similar experiments for many years to come. At any rate, although the idea of a machine made by man which would rival the birds goes back centuries before this, the "Flying Fish" of the French inventor was the first actually to fly. And, although its end was disastrous, the fact that it did fly and the knowledge that it had flown made it inevitable that some day man would be able to fly without certain disaster.

The descent of the improved aeroplane of to-day is direct from this old crude and hazardous conception of 1616, and this year therefore is the three hundredth anniversary of man's conquest of the air.

The earliest aviation legends give us Pegasus, the winged horse, Medea's dragons and Daedalus. We have winged men in both Egyptian and Assyrian bas-reliefs. Later on



The "Flying Fish." The Direct Ancestor of the Flying Machines of To-day Which in 1616 Flew One Mile. It Was a Fantastically-Shaped Balloon but Was Propelled by Planes in the Shape of Fins and Was Guided by a Tail-Shaped Rudder. The Photograph Is from a Rare Old French Oil Painting of 1609, Which Was Prophetic of the Actual Flight of This Machine Seven Years Later.

we have other records. John Wilkins, one of the founders of the Royal Society and Bishop of Chester reports, writing in 1640, that at about the time of the Confessor, "a certain English monk called Elmerus" flew from a town in Spain a distance of more than a furlong. At the beginning of the sixteenth century an Italian alchemist undertook to fly from the walls of Stirling Castle to France. He had equipped himself with wings worked by wires. He fell and broke his thighbone—an accident which he explained by asserting that in his wings had been some feathers of barnyard fowls which had an affinity for the ground; whereas if they had been made entirely of eagle's feathers, they would have been attracted by the air.

Leonardo da Vinci about the same time approached the subject in a more scientific spirit and his notebooks contain several sketches of wings to be fitted to the arms and legs.

The next real step in aviation was

made by the Jesuit, Francois Lana, in 1670. His idea, although impractical, is the only one to deal with sound theories since the "Flying Fish." Lana's plan was to procure four copper globes of very large dimensions, yet so thin that after the air was exhausted they would be lighter than the air they displaced, and so would rise. To these globes he proposed to attach a boat with sails. But the globes collapsed.

The next interesting development of the flying machine was an aerial boat invented by Dr. L. de Gusman, who was a chaplain of the King of Portugal, in 1709. De Gusman admitted his indebtedness to the French inventor of 1616, but he made his model in the form of a bird.

After this came a period of "flying men," the most notable of which was that of Restif de la Bretonne, who, in 1781, made short flights in the apparatus shown on this page. The flying men never accomplished anything. Belong to this time, too, the apparatuses of another Frenchman—M. Blanchard—who in 1783 tested,

but without much success, the machine shown at the bottom of the page. The Blanchard aeroplane, however, showed the germ of the flying machine of to-day, as did, also, the plane of 1874.

There was almost a century of experimenting on various weird-looking devices until in the middle of the nineteenth century, when the discovery of the helicopter principle, also called the gyrocopter, gave a fresh impetus to the study of aviation.

Notable in the development which followed was the flying machine of Groof, a Hollander, in 1864, and that of our own Edison in 1880. With Langley, as has been said, the real dawn of the aeroplane as it is to-day appeared.

In 1842 a steam model was invented by an American which had two of these helicopter-fans rapidly revolving. The model, it is related, "flew across the fields at a great altitude." It was smashed to pieces coming to the ground. In 1863 G. de la Landelle, a French inventor, made the curious machine whose picture appears on this page.

The idea of power other than wind or man strength to run the flying machines was, however, now well established. The engine which makes aviation possible to-day was in the course of birth.

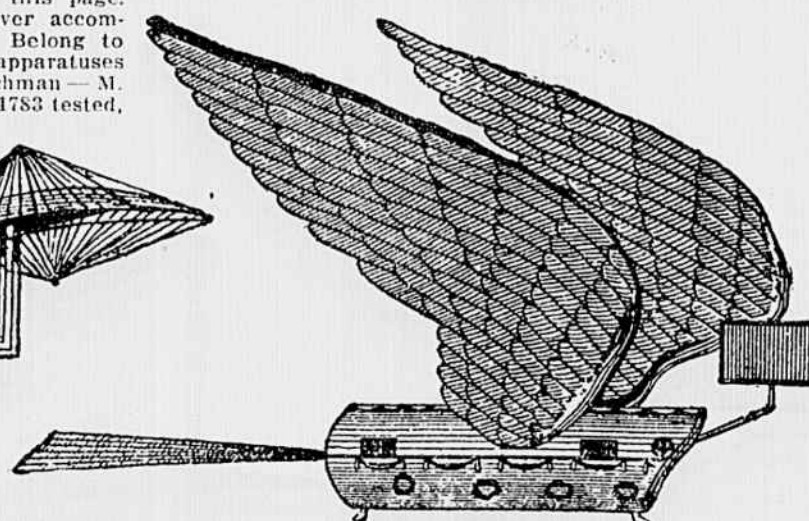
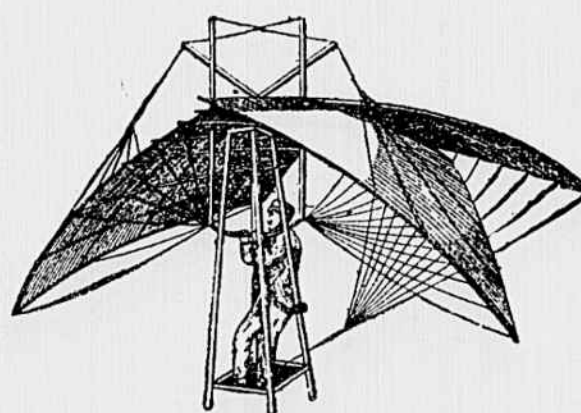
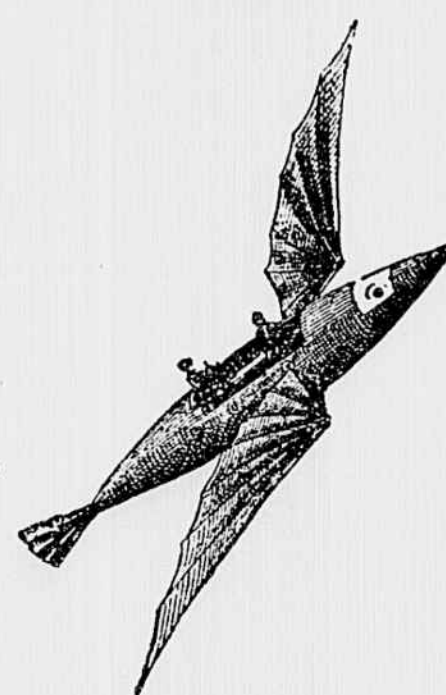
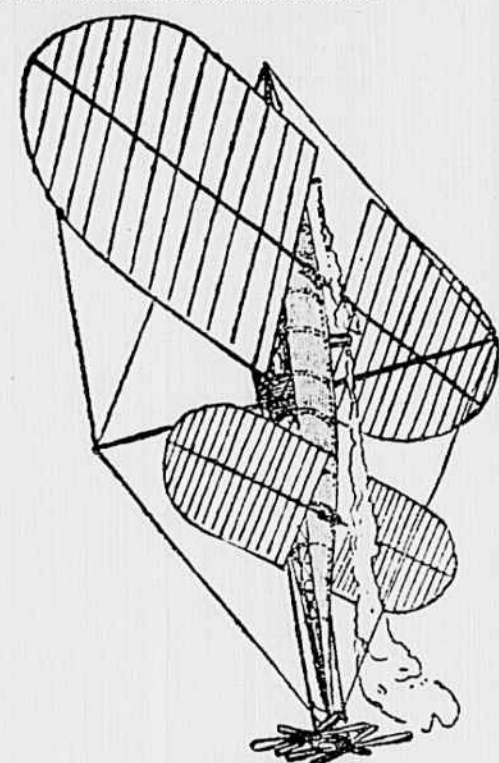
The next few years shows the helicopter, or revolving screw principle, almost entirely discarded.

Two of the most famous of the next attempts to solve the problem of artificial flight by means of aeroplanes were those of Professor S. P. Langley and Sir Hiram S. Maxim. Langley's machines were really the fathers of the best aeroplanes of to-day. Langley, who occupied the position of secretary to the Smithsonian Institution, made many small models and one large one. He called them "aerodromes."

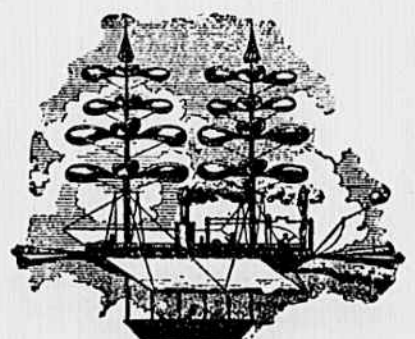
In 1893 Langley began to test his steam-driven models. They were made largely of steel and aluminum, and one of them, in 1896, made the longest flight ever recorded for an aeroplane—half a mile on the Potomac River.

The American Government, much more alive to preparedness than now, gave him fifty thousand dollars for the construction of one of his machines to be available for war purposes and to carry passengers.

Langley died before he could complete his experiments. After him came Lillenthal and the Wright Brothers. The secret of aviation was solved—three centuries after the clumsy "Flying Fish" went rolling over the awe-stricken Portuguese crowds assembled to see it.



A Gerard Flying Boat of 1784.



A Blanchard Aeroplane of 1783.

Another Blanchard One-Man Flyer of 1783.

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